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05/18/97

TO: Jet Propulsion Laboratory
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SUBJECT: Letter Of Transmittal, Monthly Status Report

In accordance with Contract #960100, Infotec Development Inc. hereby submits one original hard copy of DRD MA006, Monthly Progress Report, for the month of, April 97. Please contact me at 818-584-0878 for questions.

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ISDS Program Manager

Original and Copies to Mr. Don Lord (525 3600)

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**Information Systems Development Support (ISDS) Contract
Monthly Progress Report**

Developed by
The ISDS Team
2700 E. Foothill, Suite 200
Pasadena CA 91107

Under Contract No. 960100
Control Number: \MAR's\..\9704-00.DOC Rev 0
DRD # MA006
for the month of April 97

for the

California Institute of Technology
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena CA 91109-8099

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1. Executive Summary

"A brief narrative on significant accomplishments and events of the reporting period."

- We are waiting on Pacific Bell to install a fiber optic cable in our building to establish a T3 connection to JPL. Installation has been delayed while PacBell applied with the City of Pasadena to dig a trench from Colorado to Foothill Blvd. for the cable. PacBell got the paperwork through in record time, and we expect the T3 to be installed in the first week of June. This will be a resource for all ISDS Work Orders.
- ISDS has identified a new internet tool which allows us to keyword search thousands of resumes on free NNTP news servers. Five copies of this tool were purchased at \$25/copy. Finding personnel resources in this way has proven to be cheap, easy, and fruitful.
- Planning has begun for the ISDS picnic scheduled for the afternoon of 1 August.
- We have established a significant on-line Computer Based Training resource for our people with the following course offerings:

• MS Office	• NT 4.0 Workstation	• Novell CNE/CAN 4.1	• Lotus Notes 4.0
• MS Office 95	• Web Authoring and Publishing	• OO Analysis & Design	• Understanding MS OS's
• MS OS Tools	• Internet Concepts	• TCP/IP	• C++
• MS Visual Basic 4.0	• Unix	• LAN/WAN	
• Oracle 7 Admin	• Solaris 2.x	• LiveWire	
• Oracle 7 B/U & Recovery		• Java Script	

- We have begun a significant effort to use our site intranet in the development of procedures and processes which will help us with ISO 9000 certification. Current planning is to kickoff our ISO 9000 registration effort in the beginning of FY 98.

Significant personnel actions since the last report:

- CWO 3 - Mr. George Banfalvi declined his offer of employment. An agreement was struck between Mr. Rich Benisch and Ms. Sheila Davis to use Mr. Matthew Daily on this CWO. Matt was originally slated to work on CWO 60. He started with us on 4/28.
- CWO 56 - Ms. Jin Ma began work on 19 May
- CWO 27 - Mr. Stan Mak resigned unexpectedly and left the program on 16 May.
- CWO 28 - Mr. Wayne Tung has resigned unexpectedly and will be leaving the program on 2 June.
- CWO 30 - Mr. Bernard Widynski was laid off and left the program on 16 May.

- CWO 60 - Roughly 4-6 weeks after requirements were identified, Mr. Matthew Dailey will be starting on 28 April supporting this new CWO.

Open staff requirements

- CWO ?? - We have stopped working to identify two people with VxWorks talent to support a new project for Mr. Muh-Wang Yang, Automation and Control Section, Avionic Systems and Technology Division, Engineering and Science Directorate. We became aware of this requirement on 11 April and have identified several well qualified candidates. None of the candidates fit within the required cost profile.
- CWO ?? - We are working to identify personnel to support conversion of the Cassini Contract Management Information System (CMIS) from FoxPro to PowerBuilder.
- CWO ?? - We are interviewing personnel to provide software design and implementation support for wrapping targeted components of the procedure oriented MUSW into reusable, object oriented packages.
- CWO 11 - We are interviewing to find a person to learn and support the DSN Subsystem Interface Verifier (SIV). This is a requirement we became aware of in mid April. The intent is to find a person who can support and enhance SIV through FY98.

Contract Work Orders and Staff

23-May-97

#	Title	CWO Manager	Staff Members	
3	Telemetry Simulation Assembly (TSA II)	Kathleen	Rundstrom	
			Ron	Holden
			Youbin	Mao
			Shyan-wee (Joseph)	Jao
			Matthew	Daily
5	Design Engineering and Logistics Support	Steve	Rockwell	
			Gerhard	Stiebel
8	Section Network/System Administrator	Steve	Rockwell	
			Hajime	Sano
11	CSN Multi-Use S/W (MSW)	Kathleen	Rundstrom	
			Nhon	Hoang
			Julianna	Magallon

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#	Title	CWO Manager	Staff Members
13	Goldstone Solar System Radar Data Acquisition Sys	Steve	Rockwell Robert Chad Frye Nikoletich
14	DSCC Telemetry Subsystem (DTM) Software	Kathleen	Rundstrom Mathy Hon Ron Calvin Ravichanthira Tran Holden Cheung
15	Product Verification Subsystem/SSCANSAR	Steve	Rockwell Kenneth Bell
16	Enhancement & Maintenance of Metric Prediction	Steve	Rockwell Jeffrey Wayne Jonathon Schredder Tung Walther

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#	Title	CWO Manager	Staff Members
17	GCF Interface	Edward	Embick
			David Haupt
27	Advanced Comm Services (ACS) Data Delivery	Kathleen	Rundstrom
			Brian Schladen
			Wayne Tung
28	Advanced Comm Services (ACS) Monitor/Control	Kathleen	Rundstrom
			Erik Barkley
29	Monitor & Control X-Server Support	Edward	Embick
			Jay Cai
30	Network Control Program Common Services	Roger	Thomson
			Robert Donnelly
			Geoffrey Coward
31	Adv Comm Svcs Rel Net Svc CS	Kathleen	Rundstrom
			Michael Dern

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#	Title	CWO Manager	Staff Members	
33	DSCC Radio Science Comm Processor S/W	Steve	Rockwell	
			Steve	Rockwell
			Vui	Vu
36	Section 395 Programming Support	Edward	Embick	
			John	Veregge
38	SETS/OIS	Roger	Thomson	
			Rhonda	Bagnato
39	SPMC Support	Roger	Thomson	
			Gary	Oye
43	System Admin Support to EIS	Roger	Thomson	
			Paul	Averill
			George	Wang
			David	Coppedge
			Michael	Huang
45	Sea Dragon Command Center Test Bed	Kathleen	Rundstrom	
			Michael	Guadarrama

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#	Title	CWO Manager	Staff Members
46	EIS File Service Technical Writer	Edward	Embick Susan Kientz
47	VLBI Project Software Engineer	Edward	Embick Jeff Deifik
48	MGSO Documentation Technical Support	Edward	Embick Martha Perdomo
49	Duplicating and Distribution Support	Edward	Embick Iris Young Geroge Mondol Concepcion Alvarez Hao Le
50	Electronic Forms and Inventory	Edward	Embick Dave Swantek Karen Gerfen

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#	Title	CWO Manager	Staff Members
52	NPP Development Center	Steve	Rockwell
			Steve Rockwell
53	34 Meter Array Development	Steve	Rockwell
			Ron Holden
54	Galileo CD Technical Writer	Edward	Embick
			Susan Kientz
55	TC & DM Test Support	Edward	Embick
			Cindy Lush
56	SPC and DMD Implementation	Edward	Embick
			Clyde Chadwick
			Jin Ma
57	UNIX System Administrator	Edward	Embick
			Dimitrios Gerasimatos

2. CWO Status and Recommendations

Paragraphs in bold italics below identify the generic context in which the status of each active CWO will be discussed. This is presented here as a guideline for both the writer and the reader.

Performance Status

“The Contract Work Order Manager’s assessment of progress made in meeting the requirements of the CWO. The CWO Manager shall identify current problems associated with these efforts and any corrective actions to be taken.”

Major Accomplishments

“Identify contractual deliveries, accomplishment of critical activities, Contract reviews and CWO milestones.”

Cost/Funds Status

“Address relevant areas of cost, such as potential cost problems, their estimated magnitude, planned corrective action and predicted cost outcome. Any projected changes in the CWO’s cost Estimate-at-Completion (EAC) shall be fully explained. Contrast the EAC with the current funds ceiling and identify funding shortfalls or overages. Identify funds expiration date.”

Schedule Status

“Identify activities and milestones that have slipped from the baseline schedule, with the reason(s) for the slip, and identification of the corrective action measures implemented.”

Quality/Config Management

“The Product Assurance Program Manager’s assessment of this CWO including current issues, accomplishment of tasking, plans, changes to budget requirements, et al.”

Problems and Proposed Solutions Summary

“The CWO Manager’s summary of problems and proposed solutions including requirements for support from JPL.”

Plans

- *“Forecast Accomplishments. Identify activities and milestones that are expected to be completed during the next reporting period.”*
- *“Proposed Re-plans. Identify schedule items that should be replanned and new items to be incorporated into the established baseline schedule.”*

“Proposed Cost Adjustments. Identify adjustments to the CWO Target Cost which are required for changes in scope.”

CWO Status Summary

CWO #	Title	Cost	Schedule	Performance	Staff	Funding
3	Telemetry Simulation Assembly (TSA II)					
5	Design Engineering and Logistics Support					
8	Section Network/System Administrator					
11	DSN Multi Use Software (MSW)					
13	Goldstone Solar System Radar Data Acquisition					
14	DSCC Telemetry Subsystem (DTM) Software					
15	Product Verification Subsystem/SSCANSAR					
16	Enhancement & Maintenance of Metric Prediction Software					
17	GCF Interface (GIF)					
27	Advanced Communications Services (ACS) Data Delivery					
28	ACS Monitor & Control (M&C)					
29	M&C X/Server Supt					
30	Network Control Program					
31	Reliable Network Server					
32	ACS TCA Common Svcs					
33	Radio Science					
36	Sec 395 Programming Supt					
39	SPMC Support					
40	NOCC S/W Supt					
43	EIS Sys Admin Supt					
44	DCE Cell Design					
45	Sea Dragon Command Center Test Bed					
52	NPP Development Lab					
53	34 Meter Array Development					
54	Galileo CD Technical Writer					
55	TC & DM Test Support					
56	SPC and DMD					
GOOD						
WATCH CLOSELY						
IN TROUBLE						

2.1 CWO 01 was closed on 25 Jan 95

2.2 CWO 02 was closed 17 Sep 95

2.3 CWO 03 - Telemetry Simulation Assembly (TSA II)

2.3.1 Performance Status

2.3.1.1 Major Accomplishments

- Installed and configured software for the new TSA assembly, which replaced the one shipped to Florida for the launch of Cassini.
- Implemented a somewhat complicated and innovative software scheme for the next release so that the data file can be copied to and played out of a local hard drive.
- Worked with Sheila Davis on the interface documents received from Av-tec for the new adapter cards. Many interface issues must be reconciled with Av-tec in the next several days.

2.3.1.2 Cost/Funds Status

- CWO 3-3 for FY97 is running under budget because Douglas Lam was taken off the Work Order at the customers request in November of 1996, Youbin Mao went on vacation in December'96 and Mr. Shyan-Wee Jao, a consultant, did not charge the work order from Dec.'96 through Jan'97 and Mar.'97. Mr. Matthew Dailey has been added to the Work Order and has been included in this months estimate.

2.3.1.3 Schedule Status

- The software schedule has slipped to accommodate the uncertainty in the hardware development area.

2.3.2 Quality/Config Management

- Idle.

2.3.3 Problems and Proposed Solutions Summary

- None.

2.3.4 Plans

- Continue above work. The development of the next version of TSA software will gear up as soon as concrete interface agreements can be reached.

2.4 CWO 04 - was closed on 3 Jan 1995.

2.5 CWO 05 - Design Engineering and Logistics Support

- This work order is now defunct as the task has been outsourced to Allied Signal. A contractual action by JPL has been requested to close the CWO.

2.6 CWO 6 - was closed on 17 Sep 95.

2.7 CWO 7 - was closed on 17 Sep 95

2.8 CWO 8 - Section Network/System Administrator

2.8.1 Performance Status

2.8.1.1 Major Accomplishments

This is an ongoing network administration task consisting of general administrative actions, hardware upgrade/install/troubleshoot actions, new/upgrade/troubleshoot software actions, and solution of network related problems. Noteworthy activities include:

- Continued migration of users off of QuickMail LAN server. Task should be completed by end of May.
- Cleaned up all of 331s errant print queues and print servers in an effort to alleviate JPL-161-SERV Novell print queue problems.
- Continued investigation of B161 intermittent network problems. The formation of a troubleshooting team is being considered to address this elusive problem.
- Investigated PC upgrades (models and prices) for B161 administrative staff.

2.8.1.2 Costs/Funds Status

- CWO 8-4 for FY97 is on budget.

2.8.1.3 Schedule Status

- This is a LOE support task with no schedule baseline.

2.8.2 Quality/Config Management

- N/A

2.8.3 Problems and Proposed Solutions Summary

- None

2.8.4 Plans

- Continue system and network support.

2.9 CWO 9 - DSCC Tracking Subsystem (DTK) Software: Metric Data Assembly was completed on 15 Sep 96.

2.10 CWO 10 - MPA Enhancements - Automate 26M Operations was completed on 15 Sep 96

2.11 CWO 11 - DSN Multi-Use Software (MSW)

2.11.1 Performance Status

2.11.1.1 Major Accomplishments

- Van Hoang is continuing code changes of the LMC Simulator.
- Support was provided by both Van Hoang and Julie Magallon to the following subsystems:
 - BVR
 - Telemetry Channel Assembly (TCA)
 - Translator Service
- Released MSW 1.8.2 to SPMC for the following platforms:
 - SUN OS (2.X)
 - Vadsworks
 - vxWorks for the Power PC
 - Real/IX 68K (noansi)
- SIV support is being provided to Translator Service.

2.11.1.2 Cost/Funds Status

- CWO 11-7 is going to overrun by 19K because Ms. Julie Magallon services were extended through the end of JPL FY97. Supplement has been submitted and is with PCWO.

2.11.1.3 Schedule Status

- On schedule.

2.11.2 Quality/Config Management

- Updated RDD and delivered build for MSW 1.8.2

2.11.3 Problems and Proposed Solutions Summary

- None.

2.11.4 Plans

- Complete code changes of the LMC Simulator. This is necessary to reproduce TSA AR's.
- Continue to provide SIV support for the Translator group.
- Complete Ultra support for the Translator group.
- Complete linking/monitor data support for BVR.
- Complete the MSW matrix.
- Start the incorporation of multiple semaphore code change in MSW.

2.12 **CWO 12** - was closed on 17 Sep 95

2.13 CWO 13 - Goldstone Solar System Radar Data Acquisition System Design and Integration

2.13.1 Performance Status

2.13.1.1 Major Accomplishments

- Verified state machine on DSP port of correlator/accumulator board (CAB).
- Verified operation of CAB with Taxi board.

2.13.1.2 Cost/Funds Status

- CWO 13-6 for FY97 is under budget by \$54k because of 1) ODC of 18K for production of correlator boards being shifted out to June '97 and 2) anticipated labor hours are lower by 644 hrs to be used between April '97 and end of Fiscal year.

2.13.1.3 Schedule Status

- Tasks are on schedule - See attachment.

2.13.2 Quality/Config Management

- N/A.

2.13.3 Problems and Proposed Solutions Summary

- State machine for DSP transfer cannot operate at 40MHz. New Xilinx chips on order to remedy the problem.

2.13.4 Plans

- Verify operation of CAB with BLK V RCVR.
- Modify CAB schematics to reflect changes since integration.
- Manufacture final CAB CCAs.
- Start design of PN coder.

2.14 CWO 14 - DSCC Telemetry Subsystem (DTM) Software

2.14.1 Performance Status

2.14.1.1 Major Accomplishments

- The TCA and TGC software is currently being modified to include Fault Tolerant Data Delivery (FTDD) capabilities. The goal is to add sufficient FTDD capability in time to support MGS. Details of this effort follow:
 - The TCA and TGC S/W green builds were prepared and delivered as planned and to SPMC on April 21st, in time for entering System Acceptance Test. The software entered system acceptance test on April 28, 1997.
 - The development team was able to meet their projected deadlines despite having to fix a number of Categories A and B anomalies discovered during pre-acceptance test. The major

effort was focused on fixing anomalies related to interfacing with MCD3 and with the RNS data delivery path; in support of the MGS, MPF and Cassini missions.

- The TCA and TGC software was installed at Goldstone in preparation for supporting TMOD's MGS telemetry data flow tests originally scheduled for May 12-14th. Ron Holden and Jesus Gonzalvez are also currently installing the software at the Canberra and Madrid stations.
- Ron Holden prepared training materials and is providing 3 weeks of installation and operations training to the station personnel at Canberra.
- The development team is performing ongoing anomaly fixes to TGC/TCA software based on reports coming out of acceptance testing. These anomaly fixes will be delivered as part of future releases of the Phase 2.0 software.
- The development team assisted the ACS test team during end to end testing.

2.14.1.2 Cost/Funds Status

- CWO 14-7 is going to overrun by 155K due to personnel changes, and customer authorized overtime required to meet the MARS Global Surveyor delivery on May 1, 1997. A supplement has been submitted to cover this increase.

2.14.1.3 Schedule Status

- Currently On schedule.
- See schedule in Appendix A (Combined FTDD, MSW, & DTM Telemetry). This is a combined schedule showing the relationships between CWO's 14, 31 and 32.

2.14.2 Quality/Config Management

- Updated RDD and delivered build for TGC 7.1.8
- Updated RDD and delivered build for TCA 10.1.2

2.14.3 Problems and Proposed Solutions Summary

- The development team is currently working on solutions to all Class A anomalies that are reported during acceptance testing.

2.14.4 Plans

- Continue work on fixing Class A anomalies reported during acceptance testing.
- Continue providing training and installation support to the Canberra stations.
- Participate in the requirement analysis phase for the next DTM delivery scheduled for September

2.15 CWO 15 - Alaska SAR Facility Product Verification Subsystem Processor S/W

2.15.1 Performance Status

2.15.1.1 Major Accomplishments

- N/A - This project is currently in a maintenance and refinement phase.

2.15.1.2 Cost/Funds Status

- CWO 15-3 is significantly under budget because two personnel have been moved off this CWO and not replaced. We are interested in replacing these personnel but, to date, JPL has not indicated any immediate need.

2.15.1.3 Schedule Status

- Schedule maintained by JPL.

2.15.2 Quality/Config Management

- Backups, CM provided internally. Deliveries made directly to project without going through SPMC. JPL maintains ASF-delivered configuration.

2.15.3 Problems and Proposed Solutions Summary

- None

2.15.4 Plans

- Continue work on maintenance and refinement phase of this task.

2.16 CWO 16 - Enhancement & Maintenance of Metric Prediction Software

2.16.1 Performance Status

2.16.2 Major Accomplishments

- Investigated the NSS Whiplash Anomaly, which effects the generation of Downlink Frequency predictions for the VSOP spacecraft. Problem solved and correction proposed with delivery pending.
- Diagnosed a subtle problem with the NSS view period generator.

2.16.2.1 Cost/Funds Status

- CWO 16-6 is projected to overrun the current target cost by 215K. Additional scope is being added to the CWO at JPL's request and a CWO supplement has been submitted to cover the increased cost.

2.16.2.2 Schedule Status

- Schedule maintained by JPL.

2.16.3 Quality/Config Management

- N/A.

2.16.4 Problems and Proposed Solutions Summary

- No significant problems.

2.16.5 Plans

- Complete work on the Whiplash anomaly by delivering corrected software to Operations.
- Continue to off-load NSS domain knowledge to the rest of the Prediction Services team.
- Continue work on MPG design and SSSM integration test.

2.17 CWO 17 - GCF Interface (GIF)

2.17.1 Performance Status

- Mr. David Haupt, hired as a consultant, is supporting this effort which is scheduled to complete September 21, 1997.

2.17.1.1 Major Accomplishments

Nothing to report this month.

2.17.1.2 Cost/Funds Status

- CWO 17-3 has been extended through the end of JPL FY97 and funding has been increased.

2.17.1.3 Schedule Status

- Schedule is maintained by JPL.

2.17.2 Quality/Config Management

- N/A.

2.17.3 Problems and Proposed Solutions Summary

- None.

2.17.4 Plans

- Continue work on GIF Status Broadcasting and Logging of Unrecognized Blocks Failure Reports.

2.18 CWO 18 - was closed on 17 Sep 95

2.19 CWO 19 - was closed on 17 Sep 95

2.20 CWO 20 - was closed on 29 Dec 95

2.21 CWO 21 - was closed on 17 Sep 95

2.22 CWO 22 - was closed on 7 Mar 95

2.23 CWO 23 - was closed on 17 Sep 95

2.24 CWO 24 - was closed on 18 Sep 95

2.25 CWO 25 - was closed on 31 Oct 95

2.26 CWO 26- was closed on 5 Dec 95

2.27 CWO 27- Advanced Communications Services (ACS) Data Delivery

2.27.1 Performance Status

2.27.1.1 Major Accomplishments

RNS (Reliable Network Server): Wayne Tung and Brian Schlaeden, ISDS engineers, are performing software engineering and test in support of the upcoming ACS/RNS delivery for MGS. Accomplishments and activities include the following:

- Providing support for the RNS during the ACS End-to-End test.
- Fixed bugs found in the GMP/RNS interface
- Finished the RNS Software Operations Manual.

2.27.1.2 Schedule Status

- On Schedule

2.27.1.3 Cost/Funds Status

- CWO 27-2 is forecast to be significantly over budget due to authorized overtime. A CWO supplement has been submitted to accommodate the increase.

2.27.2 Quality/Config Management

- Idle.

2.27.3 Problems and Proposed Solutions Summary

- None

2.27.4 Plans

- Continue to support ACS End-to-End test.

2.28 CWO 28- Advanced Communications Services (ACS) Monitor & Control

2.28.1 Performance Status

2.28.1.1 Major Accomplishments

- Central Data Recorder (CDR): Stan Mak, an ISDS Engineer, is the CDE for the CDR program and is also performing software development and test in support of the upcoming MGS delivery of the new CDR. Accomplishments and activities include the following:
 - Completed the CDR op B version 2.1.4 SOM, STP and capabilities statement final drafts.
 - Delivered Green Software to SPMC of CDR op B
 - Completed CDR op B acceptance testing
 - Supported ACS end to end data flow testing
 - Completed CDR op B training materials. Training sessions need to be scheduled with operations.
 - Supported several CDR op A version 1.3.10 emergency recoveries involving corrupted data bases, badly formed checkpoint disks and jukebox problems.

- GCF Monitor and Control Program Eric Barkely, an ISDS Engineer, has been asked to become the GMP CDE and is also performing software development and test in support of the upcoming MGS delivery of the new GMP. Eric is also providing expertise in the debugging and enhancement of the legacy GMP system currently in place. Accomplishments and activities include the following:
 - Revised workstation build to produce four different versions: for Motif Window Manager, for DT Window Manager (NCP look and feel), for the CCTs (Central JPL site) and for the DSCCs (remote station sites).
 - Supported test of current workstation in the field.
 - Supported GMP Acceptance Testing and anomaly fixes as required.
 - Supported fielding of GMP as required.
 - Provided GNO workstation installation instructions to the DSCCs.

2.28.1.2 Cost/Funds Status

- CWO 28 -2 is on budget.

2.28.1.3 Schedule Status

- GMP is on Schedule.
- CDR is on Schedule

2.28.2 Quality/Config Management

- Updated RDD and delivered build for CDR 2.1.1
- Updated RDD and delivered build for CDR 2.1.2

2.28.3 Problems and Proposed Solutions Summary

- Stan Mak, an ISDS employee and the CDR CDE, is leaving ISDS this month (May). We need to start looking for his replacement.

2.28.4 Plans

- CDR
 - Finish the CDR external user Web Browser
 - Prepare CDR op B version 2.1.4 soak package
 - Support ACS end to end data flow tests.
- GMP
 - Correct anomalies found in Acceptance Test and those that were deferred.
 - Provide GMP support as required.
 - Continue to monitor temporary workstations fielded at the DSCCs.

2.29 CWO 29 - Network Monitor & Control Trans/Server Support

2.29.1 Performance Status

- CWO 29 is a Cat A position with requirements for support coordinated, but not directly managed by ISDS. Mr. Jay Cai has been working under this CWO as a consultant. No support was provided during the month of April.

2.29.1.1 Major Accomplishments

- Finished memory mapping for TS recovery.
- Rewrote mon_response_cb.
- Merged error handler bask to TS (version ts.feb13).
- Coded error event notice for TS.

2.29.1.2 Cost Funds Status

- No work was performed under this CWO in April. At the level of support requested by JPL, this CWO would be over run by 44K. The customer is aware a modification is needed to cover Mr., Jay Cai charges and a supplement has been submitted.

2.30 CWO 30 - Network Control Program Common Services

2.30.1 Performance Status

2.30.1.1 Major Accomplishments

- Bernie Widynski worked on ftdctest module
 - Developed an interface between the dgenx and ftdctest programs.
 - Added changes to a new release.
 - Made program return properly instead of exiting on error.
- Geoff Coward worked on SCF directive registry for Delivery 2.
 - Studied MON-3, UDS UG, and general DCE methods.
 - Gained understanding of MSW method of handling directives.
 - Studied existing directive syntax checker in SCF Delivery 1.
 - Created draft proposal for SCF directive registry.
- Vui Vu worked with OSE and DMS to finish CATA PAT.
- Vui Vu wrote CATA PAT report to finish CATA PAT.
- Bob Donnelly wrote SCF PAT report to finish SCF PAT.
- Bob Donnelly worked on MCIS performance testing.
 - Updated MCIS LAN/WAN numerous times to account for requirements changes and DFS workarounds. The MD archive on the DMS machine was dropped and scripts were rewritten so DFS could be totally avoided.
 - Ran tests as DFS problems allowed. Determined that having the MD archive on a single machine is too high of a load. Also determined that if a backlog of MD develops, the whole system, including publishers, is slowed down.
 - Without MD archive and with DFS workaround, ran LAN and WAN tests which meet all Delivery 1 performance requirements for MCIS.

- Hosted meeting on MCIS WAN test to get consensus that test meets requirements and further understanding of test.
- Bob Donnelly ran MCIS performance tests with OSE to complete testing phase of MCIS PAT (and thus all CS PAT). Writing MCIS PAT report remains.
- Bob Donnelly delivered MCIS 1.1.2b to Doug Lam who delivered it to SPMC. This speeds reading large MDSpecs files as requested by ACS.
- Bob Donnelly worked on NCP Test Bed:
 - Tracked continuing DFS problems. There are various problems which combined were enough so MCIS WAN test had to be done exclusively from local disk.
 - Worked with Steve Silverman to establish network monitoring.
- Bob Donnelly performed SysAdmin on SPMC build machine.
 - Checked it over after bean breakin. eridanus was not compromised.
 - Moved it over to Group 2 LAN so SPMC builds could continue.
 - Got list of Solaris patches on test bed for installing on eridanus.
- Bob Donnelly performed SysAdmin on ISDS (CWO 30) Suns.
 - Installed Secure Shell (ssh) and removed telnet, rlogin, and ftp access to meet NCP security requirements.
 - Investigated other security issues including sendmail and dtlogin access.
- Bob Donnelly and Geoff Coward provided input to Delivery 2 plans.

2.30.1.2 Cost/Funds Status

- CWO 30-2 is on budget.

2.30.1.3 Schedule Status

- On schedule.

2.30.2 Quality/Config Management

- Updated RDD and delivered build for NCP MCIS1.1.2A

2.30.3 Problems and Proposed Solutions Summary

- Working on the DFS problems in the NCP test bed still took considerable time this month and impacted our schedule. We rewrote scripts to avoid DFS as a workaround.
- The NCP "veggie" and "dog" nets were compromised. This impacted CS less than other elements, but we did lose access to ClearCase and DDTS and lose time because of eridanus and inability to collaborate with NMC. We are currently unable to gain DDTS access to finish MCIS PAT report.

2.30.4 Plans

- Write MCIS PAT report.
- Look into security issues further.
- Install Solaris patches and DCE patch 16 on eridanus and ISDS Suns.
- Work with OSEs on CS AT.
- Start to address Delivery 2 items.

2.31 CWO 31 - ACS RNS CS

2.31.1 Performance Status

2.31.1.1 Major Accomplishments

Fault Tolerant Data Delivery (FTDD) and GCC Accountability Software (GAC): Mike Dern is the lead engineer for the FTDD and GAC software development effort, which are Common Software Components required to support the upcoming ACS delivery of the new RNS. Mike has also been critical in assisting the rest of the RNS team in their development and test efforts. Accomplishments and activities include the following:

- Delivered FCS and GAS software to ISDS CM (for delivery to SPMC) - Green disk - Version 1.18.1 FCS, Version 1.17.16 GAS
- Continued testing FTDD and accountability code
- Corrected several FTDD and GAS anomalies that were found during testing and incorporated into the green build.
- Updated the FCS SOM
- Modified and delivered 890-201 encapsulation tables to SPMC at the request of Bruce McLemore.
- Began work of design of 890-201/890-131 to/from FTDD translator.
- Supported GIF code walk through of code that interfaces to all FCS functions. Suggested changes and possible anomalies.
- Modified 890-201(lite) code so that the DDD header format (in the VSID area) agrees with the published (DFL-1-1) format.

2.31.1.2 Cost/Funds Status

- CWO 31 requires addition funding in the amount of \$27K due to the customer's request to accelerate the schedule. This resulted in the addition of Jeff Deifik to the work order for 2 months and a significant amount of authorized overtime. A supplement had been submitted to cover this increase.

2.31.1.3 Schedule Status

- On Schedule. See schedule in Appendix A (Combined FTDD, MSW, & DTM Telemetry). This is a combined schedule showing the relationships between CWO's 14, 31 and 32

2.31.2 Quality/Config Management

- Updated RDD and delivered build for FTDD 1.17.1
- Updated RDD and delivered build for FTDD 1.18.1
- Updated RDD and delivered build for GACC 1.7.13
- Updated RDD and delivered build for GACC 1.7.16

2.31.3 Problems and Proposed Solutions Summary

- None.

2.31.4 Plans

- Continue with design of translator.
- Continue to support all FTDD and GAS users
- Continue to support 890-201 TCA changes and testing

2.32 CWO 32 - ACS TCA Common Services

2.32.1 Performance Status

2.32.1.1 Major Accomplishment

- Supporting TCA development staff in integration of TCA and FTDD.

2.32.1.2 Cost Funds Status

- CWO 32-2 For FY97 is on budget.

2.32.1.3 Schedule Status

- On Schedule. See schedule in Appendix A (Combined FTDD, MSW, & DTM Telemetry). This is a combined schedule showing the relationships between CWO's 14, 31 and 32

2.32.2 Quality/Config Management

- Idle.

2.32.3 Problems & Proposed Solutions Summary

- None.

2.32.4 Plans

- Continue supporting the TCA / FTDD integration effort as needed.

2.33 CWO 33 - DSCC Radio Science Communications Processor (RSCP) Software

2.33.1 Performance Status

2.33.1.1 Major Accomplishment

- POCA time tag mismatch problem completely fixed and tested.
- Completed Pre-Acceptance Testing of new RSCP operational software, OP-D, version 400 software.
- Prepared Removeable Hard Disk for Acceptance Test and submitted new software to SPMC for Acceptance Test.

2.33.1.2 Cost Funds Status

- CWO 33-2 For FY97 is going to overrun by 11k due to additional hours to meet the customer requirement. Expect to be back on budget in the next quarter due to diminished involvement by the Radio Science CDE.

2.33.1.3 Schedule Status

- JPL work order manager maintains the schedule for this CWO.

2.33.2 Quality/Config Management

- Idle.

2.33.3 Problems & Proposed Solutions Summary

- None.

2.33.4 Plans

- Begin work on the Closed Loop Control Task.

2.34 CWO 34 - Alaska SAR Programming Support was complete 15 Sep 96

2.35 CWO 35 - Never Place On Contract

2.36 CWO 36 - Section 395 Programming Support

2.36.1 Performance Status

- Performed Multi-Mission Spacecraft Analysis (MSAS) test analysis and documentation.
- Summary of V3.0.A Interim and V3.0.B Testing:
- Test Runs - 132 AR's opened - 123 AR's closed - 111
- Maintained MSAS test web pages - <http://puente/MSAS/testdocs/home.html>
- Daily email Anomaly Report (AR) notifications to developers (143 emails)
- Weekly updates to AR pages and MSAS AR database (450 AR's)
- Updated databases for applications, developers, and CMSAS information
- Bug Fixes to MSAS Test website software
- MSAS CM CGI script
- MSAS CM Makefile

2.36.1.1 Major Accomplishment

- Completed V3.0 Testing on May 13
- Apr 4 V3.0.A Delivery
- Apr 18 V3.0.A Interim (bug fixes) Delivery
- May 5 V3.0.B Delivery
- May 15 V3.0 Delivery Review Board (SysDR)

2.36.1.2 Cost Funds Status

- CWO 36 -1 For FY97 is on budget.

2.36.1.3 Schedule Status

- The schedule is maintained by JPL.

2.36.2 Quality/Config Management

- Ongoing.

2.36.3 Problems & Proposed Solutions Summary

- None

2.36.4 Plans

- Complete V3.1 testing and maintain MSAS test web pages.

2.37 CWO 37 - Work Order Processing System (Section 644) - Closed 4 October 96

2.38 CWO 38 - Schedule, Estimating, Tracking System (SETS) (Section 644)

2.38.1 Performance Status

A draft document was submitted to David Deats identifying the contents of directories on the \\techsvcs server and \\sets server. To date, a connection to these servers is no longer available. No additional work will be done on this CWO unless these connections are restored.

2.38.1.1 Cost Funds Status

- CWO 38 overran the original target cost.
- A CWO supplement has been executed to allow JPL to fund the overrun. Although quoted to include fee, this supplement is not fee bearing because it is being executed to cover an overrun.

2.39 CWO 39 - SPMC Configuration Management Support

2.39.1 Performance Status

2.39.1.1 Major Accomplishment

- ACS: Worked with Mike Rafferty, Mary Kay Douglas, Don Germann, Doug Lam, Mike Dern, Stan Mak, Peggy Burns, Tom Thorman, Fannie Chen, Mark Parisi, Hon Tran and Calvin Cheung on ironing out build procedures for GAD (1.0.0, 1.0.1), RNS (1.0.6, 1.0.7, 1.0.8), FCS (1.15.0, 1.15.3, 1.16.5, 1.17.1, 1.18.1), GACC (1.7.0, 1.7.1, 1.7.11, 1.7.13, 1.7.16), CDR (2.1.1, 2.1.2, 2.1.4), HSPT (5.1), GMP OP-B (1.0.0, 2.1.0), TCA/VxWorks/PDOS (10.1.0a, 10.1.0b) software on ACS. Assisted ISDS CM in processing CDR, FCS and GACC deliveries to SPMC, and software maintenance on 'kelvin'. Helped resolve problems with TCA/VxWorks and TCA/PDOS with SPMC and the ISDS Team. Assisted in defining configurations for MSW 1.8.2 (official and engineering) and 890-201/PowerPC 1.0.0 in support of TCA. Roger Crowe provided positive feedback on SPMC's and ISDS's joint effort in processing TCA 10.1.0. TGC 7.1.5 build failed due to embedded non-existent MSW references. HSPT 5.1 was built using a Sun workstation and the OS/9 machine in building 507. Resolved internal system access problems for the GAD 1.0.1 SPMC build. Reported ACS status to Brian Hammer.
- NCP: Worked with Vincent Hung to verify problems with NMCTS 1.0.2. Installed latest versions of MCIS, UDS, NMCUI, SCF, CATA pending resolution of problems with DFS, AFS, test bed, 'aries' and 'eridanus' access. Initiated a weekly SPMC Build Status Report for Delivery 1 staff. Attended Delivery 1 planning meetings (Tuesdays 1:30 p.m.). Worked with Hafen McCormick to build NMCTIA (1.0.0, 1.0.0a). Worked with Shirley Cizmar to determine problems with building NMCUI, NMCGCE and NMCCE. Modified procedures for installing NCP software on DFS. Attended a meeting (4/4) on NCP delivery procedures. NCP was declared "red" due to problems with

DCE and X.500. An invalid MCIS 1.1.2a version was delivered by ISDS to SPMC resulting in unexpected software being delivered for GMP (Incorrect "tar" file provided to ISDS CM, and incomplete software verification at ISDS).

- DOSL: Put together a working plan for delivering DOSL machines to the stations without requiring secure shell software (Instead of delivering software from ILAN to OPS LAN, set up a DOSL "server" on the OPS LAN). Requested recommendations from Robb Warren and Sevak Gevorkian on DOSL plans in-works, then began implementing the plan with the help of Chris Leng. Monitored Bob Balkenhol's progress on swapping 'durango' and 'tuff4', then separating 'wombat' from 'durango' ('wombat' becomes the DOSL "server", 'durango' gets a hardware face lift, alleviating some storage limitations for reference source code). Requested disk and tape drive hardware installations for 'wombat' and 'forest' (NCP/CS, OVLBI, DOSL).
- In addition to ACS and NCP tasks, supported SPMC Acceptance Test builds for NRT 5.2.2, MDA 4.1.4 and SEMAFOR (SEM-DP, 1.0.0) software. Reported failures with email notification on the SPMC On-Line System (Minor delays in processing CATA, TGC and RNS were experienced).
- Initiated SPMC weekly group meetings at building 502 (Mondays 10:00 a.m.). Checked into the impact of Year 2000 on SPMC-related software items. Forwarded requests for McCabe Tool maintenance and SPMC printer problems to Keith D. Williams. Met with Keith to discuss alternative plans for implementing back-up procedures for SPMC (Data was being reported as "lost" during overnight back-up's).

2.39.1.2 Cost Funds Status

- An estimate to extend this CWO 39-1 to the end of July has been submitted at JPL's request.

2.39.1.3 Schedule Status

- This is an LOE support task.

2.39.2 Quality/Config Management

- NA

2.39.3 Problems & Proposed Solutions Summary

- This work has been outsourced to Allied Signal. The current CWO expires in March and no sub-contract has been negotiated with Allied. It is our recommendation that the CWO be extended through the fiscal year.

2.39.4 Plans

- Continue support.

2.40 CWO 40 - Network Operations Control Center Support was closed Feb 97.

2.41 CWO 41 - ISDS Additional Tasks was complete 15 Sep 96.

2.42 CWO 42 - Arrayed Doppler - PCWO canceled

2.43 CWO 43 - System Admin Support to EIS

CWO 43 is a Cat A task and not directly managed by ISDS.

2.43.1 Cost Funds Status

CWO 43 is estimated to complete over budget due to authorized overtime. A supplement has been submitted to accommodate the increase.

A supplement is needed to cover for this over run.

2.44 CWO 44 - DCE Cell Design Consultation

2.44.1 Performance Status

- PSW Inc. has completed their work. Since there is no follow-on anticipated by JPL, this CWO is being closed effective the end of this reporting period

2.44.1.1 Cost Funds Status

- CWO 44-1 is under the estimated budget because actuals for travel were lower than anticipated.

2.45 CWO 45 - Sea Dragon Command Center Test Bed

2.45.1 Performance Status

2.45.1.1 Major Accomplishment

- Sea Dragon
 - Began work on port to NT platform
 - Examined transferring code to C++
- GCCS Oracle Upgrade
 - Updated ADA catalog program by creating SQL code to automate dependency searches.
 - Completed the ADA package dependency search for the Message Manager application.
 - Documented the database structure necessary for the Sybase to Oracle port of the Message Manager.

2.45.1.2 Cost Funds Status

- CWO 45-1 has been extended from ending in March 1997 to ending in September 1997 at the customer's request. Funding has been increased to cover this extension and to cover customer requested overtime.

2.45.1.3 Schedule Status

- Schedule being maintained by JPL

2.45.2 Quality/Config Management

- Idle

2.45.3 Problems & Proposed Solutions Summary

- Need Oracle 7.3 to investigate Sybase migration scripts.

2.45.4 Plans

- Continue the NT port for SeaDragon
- Examine the decision point software suite for possible improvements for SeaDragon

2.46 CWO 46 - EIS File Service Technical Writer

2.46.1 Performance Status

- EIS File Service Site (current)
- Added two "What's New" items on site, one about long file name translators afspt3 and 4 now available and how to install them, and one about the availability of unix2dos utilities for Windows 95 and NT users. Some minor changes to the Distributed File System (DFS) documentation (refining its connection to Distributed Computing Environment (DCE)) were made. Question (and answer) about time resetting on UNIX clients were added to FAQ. Also created DFS ACL information culled from the Introduction to DFS and offered a link on Getting Started with DFS. The DCE Change Password page was enabled with corrected/added links to that form from webpages and autogenerated mail files. Some .mail files were updated JPL's request. Also with JPL's input, created Win NT protection files (ACLs) instructions and assembled a Win NT User's Guide. Removed (commented out) outdated JPL webmaster's link until she can work on the file.
- The method for changing a mailstop listed on the x500 was incorrect on some of the webforms generated by sign up and group sign up; correction provided by JPL and files changed as needed. The Outages page was linked to Help page, but later commented out since more questions/concerns were raised by the Outages reports. Discovered there is an EIS File Service Admin page, and New Hire Clues page. Updated Admin page and mailed FIL group the URLs in case other relatively new staff members were unaware of those resources.
- EIS File Service site (in development)
- Began working with the designed second level "frame" pages, which needed the latest names of sections plugged in to it (they were longer than ones used in the original examples and their length needed to be factored in, so everything would fit properly). All forms which will be needed were assembled (the shell only--.cgi programs are needed to actually make the forms work). Found out from that all forms should live together in one directory, so any error screens could serve multitude of programs. Moved every form (over 50 files) to directory "forms" and changed their links accordingly.
- Started to experiment making the top page of the new site match the more favored 2nd level (frame-based) design. The design team talked of adapting the EIS logo for File service, so using Photo Shop

the writer designed a logo which added "File Service" on bottom of EIS logo (moved some design piping aside to fit the addition). Reworked 2nd level design to accommodate logo and latest names of sections, and made top page match that. Then edited all corresponding second levels to reflect that design, for demonstration. Peter, George, and Faith Macreary gave feedback on 14 slightly different (and hopefully improving) versions of this new top page during week. Still undecided if this new style choice will be accepted for the release.

- It was recommended we take an e-mail or in-person survey to determine what users want for the site. We received examples of surveys and documentation on how to use the results. An example survey was drafted while appropriate e-mail addresses to poll were collected. At same time, the Help files were redone to point people to the platform-specific FAQs instead of leading them right into the help forms area and created DFS ACL information culled from Intro. to DFS.
- The survey to poll current and new users was refined. Current users e-mail addresses (963 of them) were identified for a mass mailing. The EIS FIL group reviewed the survey, and the EIS File Service survey format and content were finalized. Post sent to jpl.general asking for volunteers. Over 1,100 e-mails sent out by Friday, May 2. Seven people have responded as by answering the first part of the survey, and two people have completed both parts, as of this writing. One survey receiver called to ask about our website redesign process and requested the technical writer come speak to his group (in 312) about our results in a few months. The assigned writer began reading a good redesigning website book, "Designing Killer Web Sites." She is planning to implement many of the suggestions found there, on the new site.

2.46.1.1 Major Accomplishments

- EIS File Service, development site: After reading a book on website
- redesign, the assigned writer is in the process of implementing those style ideas, visible at <http://eis.jpl.nasa.gov/fil/> . This also is in agreement with suggestions
- from the human factors consultant that we have a nonframes choice and that
- we only have 5 or 6 main choices on the main (in this case, "core") page.

2.46.1.2 Cost/Funds Status

- For FY97 is on budget.

2.46.1.3 Schedule Status

- EIS File Service -- current site: The site is still maintained and working.
- There are no goals for this site except that it work until we switch to new site.
- EIS File Service -- development site: The program to add nav bars and decorations has been abandoned, since The assigned writer came up with an idea for the frames-based site which sounded acceptable to the team. The site works as it stands, except some reworking of the main "core" page has left some sections unlinked. Once they are enabled again, the site is close to being releasable. The only thing still not ready is the auto-daily downloaded tool catalog. She has repeatedly asked we get this going but has been told to hold off on talking to the people involved.

2.46.2 Quality/Config Management

- Revision control is in place.

2.46.3 Problems and Proposed Solutions Summary

- EIS Development site: Just a few weeks before the new site was planned for deployment, a major setback occurred when a human factors specialist was brought in to give her "blessing" on the site. She did not. She insisted there were major problems, and we first should take an official survey of priorities rated by our users. From 1,100 emails sent, 7 have responded. On review of the ideas in these e-mail responses, while certainly not frivolous, we find the suggested structure proposed for the site is unacceptable. The team views this survey as a formality and an idea-generator, and our decisions on the site (which should be the ISDS technical writer's decisions, according to the human factors person) need not be forced to implement *any* suggestion from the survey. One good thing to come out of this: the assigned writer has had time to read several redesigning websites books and review related websites, and now has even better ideas for the EIS development site, ones that do factor in input from the human factors expert.

2.46.4 Plans

- EIS File Service: Finish new site for upcoming demonstration. Then start modifying it, once it is working, and all links hot. The end of first week in June is the new target for when it will be demonstrated for a limited group.

2.47 CWO 47 - VLBI Project Software Engineer

2.47.1 Performance Status

- Rewrote command line parser (tcfCmdLine) and configuration file parser (tcfConfig) to keep their data local and private. Wrote access functions that allow other modules to query the data without modifying it. Also made the parsers for tcfCmdLine and tcfConfig much more general and regular. This made things more readable as well as making them easier to modify. Wrote module tests for tcfCmdLine as well as tcfConfig that test all the options. These are the first module tests.
- In conjunction with JPL software engineer, implemented a new way of dealing with clock setting events (CSE). This resulted in a significant reorganization of the code, and improved its functionality greatly. Now tcfgen can deal with multiple CSE's. **This is a major advance in functionality.**
- Initialized all fields of all data structures, public and private, to default values or illegal values.
- Made a module (tcfGlobals), where all global variables are declared and initialized. Also, wrote a module to parse relativistic correction data (tcfparseREL) and wrote ascii dumpers for all output data files.
- Cleaned up and partially rewrote the FITS dumping programs. These programs are used to verify the FITS files that tcfgen produces.

- Reorganized many functions, variables, modules in order to simplify and clarify the code. This included renaming many functions and variables to clarify processing. Renamed most tcfgn files to conform to a uniform naming convention.
- Many subroutines to generalize and modularize code were written. This includes a general way of writing out times, logging output, a linear interpolator, etc.
- A general purpose error reporting function, Verrmess, was written. All errors in DOTS are reported with this function. A number of error and logging messages were modified to make them clearer and more detailed.
- Profiled tcfgn, and made a number of performance related improvements.
- Maintained MSAS test web pages. Sent Anomaly Reports (AR's) to developers and updated databases with new applications and developers.

2.47.1.1 Major Accomplishments

- No major accomplishments this month.

2.47.1.2 Cost/Funds Status

- A supplement has been submitted to accommodate request of JPL CWO manager to extend this CWO to last through the end of JPL FY97.

2.47.1.3 Schedule Status

- Schedule is maintained by JPL.

2.47.2 Quality/Config Management

- All the software is under version control using cvs, a standard version control system, and we are using standardized make files.

2.47.3 Problems and Proposed Solutions Summary

- We still have poor test case coverage. We continued to improve the test cases.

2.47.4 Plans

- Continue to enhance tcfgn and clean up source code and documentation.

2.48 CWO 48 - MGSO Documentation Technical Support

2.48.1 Performance Status

- **Version 22.2:**
- **errata**
- Did research in order to create an errata for Version 22.2. This included meeting with MGSO librarian and SEQ System Engineer. The document was created and went through review and signature cycle. It was submitted to the library both electronically and hard copy with original signatures. Distributed hard copy with memo.

- **Work Implementation Plan**
- Meet with SEQ System Engineer to discuss changes. Researched requirement numbers and inserted them in document. Made further Revisions.
- **Environment File for SEQ**
- Made further revisions. Signature cycle complete. Spoke with author & SEQ System Engineer over phone to discuss revisions. Meet with SEQ System Engineer to discuss revisions.
- **SIS SASF**
- Made further revisions. Made hard copies and sent them out. Sent revised copy out for review to the author. Signature page was sent out - cycle is currently on hold due to further changes to document. Spoke with author & SEQ System Engineer over phone to discuss revisions. Meet with SEQ System Engineer to discuss revisions.
- **SIS SSF**
- Made further revisions. Spoke with author over phone to discuss revisions. Sent revised copy out for review to the author. Spoke with author & SEQ System Engineer over phone to discuss revisions. Meet with SEQ System Engineer to discuss revisions.
- **SEQ Test Plan**
- Completed signature cycle. Prepared document for submission to library. Submitted to library.
- **Cassini HSS Test Plan/Test Specification**
- Completed signature cycle. Prepared document for submission to library. Submitted to library.
- **Cassini HSS Users' Manual**
- Reformatted entire document. Sent document out for review electronically.
- **APGEN Test Plan/Test Spec.**
- Currently in signature cycle. Reformatted sections of document. Preparing electronic copy for library submission.
- **Version 22.3**
- **STS Software Requirements Document**
- Edited and formatted document. Created distribution list, and document log. Obtained document number from MGSO library. Assigned numbers to requirements. Sent document for review electronically. Currently in signature cycle. Prepared document for submission to library.
- **Version 23**
- **SIS Predicted Events File**
- Made revisions to document. Sent electronic redline copy for review to SEQ System Engineer.

- **TAS Documents**
- Last document for this version has been reformatted and sent to author for review.
- Prepared and distributed a weekly Planning and Sequencing Document Tracking Status Report for the following versions:
 - Version 22.2
 - Version 22.3
 - TAS Documents
- Met with MGSO Librarian to obtain document numbers and histories needed for documents.

2.48.1.1 Major Accomplishments

- Completed errata for PEF SIS

2.48.1.2 Cost/Funds Status

- On budget.

2.48.1.3 Schedule Status

- Schedule is maintained by JPL.

2.48.2 Quality/Config Management

- All documents are under version control.

2.48.3 Problems and Proposed Solutions Summary

- Progress with SIS documents in version 22.2 was held up because of problems with a color printer. We needed to provide a customer with color redline copies of this particular series of documents because of the detailed changes. The writer went to the lab, and unfortunately the color printers that she had access to were not working. She then went to Kinko's and had no success there either. She was waiting for the ISDS Epson Color printer to be moved to her cubicle to connect directly to her computer. She was also checking on the repair status of the lab color printers.

2.48.4 Plans

- To continue progress with Version 22.2 and 22.3 and to complete TAS documents

2.49 CWO 49 Duplicating and Distribution Support

2.49.1 Performance Status

- Details of the ISDS support activities can be found in the *Logistics Information Technology Office (LITO) Status Report for April*, 6410-97-0032. Highlights follow.

- Division 64 Information Technology Support - Routine Division support included concentrating on HTML development of Web pages for Division 64 Technical Bulletins; determining training needs for the month, scheduling training as required; researching relevant chapters from customer satisfaction measurement book, and in general responding to user service requests for software modification, data, or help. A member of the staff attended weekly meeting with the Archives and Record group for the requisition and implementation process of the Online Archive System.
- Completed about 90% the work for the Library Subscription Renewal Memo application. This application will be used by the Library Acquisition Group for their Annual subscription renewal process.
- Provided hard copies for HR personnel to review ten of the distribution lists as the result of the new JPL base pay program. Then organized a meeting with HR personnel, Distribution supervisor and clerk to discuss ten of the distribution lists in question because of the new JPL base pay program.
- Duplication and Distribution - Provided on-going support for the Duplicating and Distribution group and others as necessary. A proximally 20 tech support phone calls received this month. All the questions/problems were answered/solved.

2.49.1.1 Major Accomplishments

- Installed a copy of Graphic and Vendor Cost Comparison application on the Section 644 administrative assistant's computer. By using this application she is able to compare the graphic vending cost among their four vendors, print reports, and save the information for future use. This application greatly reduces her manual calculation time. A letter of appreciation for the completion of the application by the programmer in so short a period was forwarded to ISDS.
- Modified the Document Distribution Label Management system to generate all the distribution lists for all the management personnel.
- Completed updating the JPL Classified and Organizational Lists. These two lists (tables) are accessed by the On-line Telephone Directory System used by Division 64 personnel.
- Finished change requests for the Work Order System and Time Keeping applications.

2.49.1.2 Cost Funds Status

- This CWO will overrun by 14K if the full staff spends full time supporting this CWO as originally planned. As of April 25, 1997 actual hours worked are greater by 93 hours than the projected hours. However, some staff supporting this CWO will also be supporting some development work on CWO 50. We will know next month if a supplement is needed to cover the labor.

2.49.1.3 Schedule Status

- Schedule Maintained by Code 644.

2.49.2 Quality/Config Management

- N/A.

2.49.3 Problems and Proposed Solutions Summary

- N/A

2.49.4 Plans

- Continue software development, day-to-day information technology support, Help Desk and Division 64 support as required.

2.50 CWO 50 Electronic Forms and Inventory

2.50.1 Performance Status

- **Forms Management** Completed integrating the InfoTrac software purchased from Protech Solutions with the Forms Services Application (FSA). The webpage continued to be updated with new forms as they were produced and documented.
- **Inventory Maintenance** - Weekly maintenance and backup of the portion of the Inventory Control System that resides on the IBM 8130 continued. Created an ad-hoc report of all items in the inventory that required a MSDS sheets. (Material Safety Data Sheet). The Safety people wanted to know what items in the inventory have these sheets. We might add another flag to the inventory system to identify these items in the future.

2.50.1.1 Major Accomplishments

- Forms Management - Successfully integrated FormFlow 1.1 Intelligent Forms Language (IFL) with FormFlow 2.0 FormBasic

2.50.1.2 Cost Funds Status

- This CWO is on budget.

2.50.1.3 Schedule Status

- Schedule maintained by Section 644.

2.50.2 Quality/Config Management

- N/A.

2.50.3 Problems and Proposed Solutions Summary

- We continue to response and help users on FormFlow. The number for this month was approximately 118 calls, most due to the new Travel forms. Most of the calls were for updating computers. There were also approximately 50 emails with the request. All were put on hold until we could work out the bugs with a few users who had received the new travel forms and found problems. Then a uniform solution will be applied to all.

2.50.4 Plans

- Continue to complete design of FMS, development of FSA modules, and provide user and inventory system support as required .

2.51 CWO 51 Physical Oceanography Distributed Archive Center was complete Jan 97.

2.52 CWO 52 NPP Development Lab

2.52.1 Performance Status

2.52.1.1 Major Accomplishments

- The facility has been furnished and phone and data cabling is complete.
- ISDS met with ACRO, UTA, Telos, and Sterling and finalized a plan for facilities billing. ISDS issued sublease contracts to same in late April.

2.52.1.2 Cost/Funds Status

- CWO 52 actual cost are not all accounted for yet.

2.52.1.3 Schedule Status

- We are working toward T3 equipment delivery near 1 May. The target date for occupying the facility is 2 June.

2.52.2 Quality/Config Management

- N/A

2.52.3 Problems and Proposed Solutions Summary

- Pacific Bell has slipped installation of the T3 to the second week in June.

2.52.4 Plans

- There were a number of items recently identified for the lab which are currently being procured. These include white boards, a printing white board, a large conference table and chairs.
- Cost analysis is complete for the period from 1 Feb through 30 May and an estimate has been submitted to JPL contracts. A cost estimate must be developed for the period from 1 June to the end of the FY.

2.53 CWO 53 - 34 Meter Array Development Support

2.53.1 Performance Status

- Attending weekly Full Spectrum Processor (FSP) test planning meetings.

2.53.1.1 Major Accomplishments

- None.

2.53.1.2 Cost Funds Status

- This CWO is on Budget.

2.53.1.3 Schedule Status

- Schedule maintained by JPL.

2.53.2 Quality/Config Management

- N/A.

2.53.3 Problems and Proposed Solutions Summary

- The assigned test analyst is completing another assignment and is only part-time until June. Since the subsystem is not scheduled to be operational until the end of 1999, and is still in an early phase of development, this delay will not affect his participation in test development.

2.53.4 Plans

- Study the DTM Test Plan/Procedure document and identify test that apply to the FSP.

2.54 CWO 54 - Galileo CDROM Technical Writer

2.54.1 Performance Status

- All major sections outlined and assigned continued to be delivered with an assortment of due dates. All deadlines were met within a day. The Outreach team is still in process of hiring a reviewer. The style is coming along fine, in our writer's opinion and in theirs, so she has suggested that perhaps she can later review the entire body of work submitted and align it all into a consistent style, tone, and terminology. The team is very happy with the output now, and work continues.

2.54.1.1 Major Accomplishments

- Not only is our technical writer writing the history of Galileo, she finds more and more that the most satisfying parts of the narrative is when she is able to give some perspective or interpretation of that history. So much written in the conference papers and the Galileo newsletters has implied meaning rather than its key points spelled out. The Outreach team is thrilled that she can "bring together" a "focus" for the in-depth sections she's writing now. For example, they were desperate for a focus for the Venus flyby. After reading and rereading the available information, she casually remarked that it was the perfect stop for Galileo, since both Venus and Jupiter have such deep clouds, which gave Galileo's infrared and other atmospheric instruments a good workout. These kind of comments often are not said outright. Other perspectives she has been able to come up with sometimes do not occur to contemporary commentators of events until years after an event occurs. She feels fortunate to be able to do what she can to offer some "interpretive" perspective to the Galileo narrative.

2.54.1.2 Cost Funds Status

- This CWO is under budget.

2.54.1.3 Schedule Status

- Schedule maintained by project. All schedules have been met to date.

2.54.2 Quality/Config Management

- N/A.

2.54.3 Problems and Proposed Solutions Summary

- None

2.54.4 Plans

- Continue developing the document.

2.55 CWO 55 - TC and DM Test Support

2.55.1 Performance Status

- The assigned software engineer continued development of regression tests for the Telemetry Input system (TIS) V22.4.
- Started testing the following new TIS projects (TIS) Change Requests (cr) and Anomaly Reports (ar):
 - **ar7080** - Started testing on Lunar Prospector. Working on defining if the data delivered is good.
 - **ar7548** - Started testing on Multimission. Waiting for MMTtis to be delivered*.
 - **ar7667** - Started testing on Multimission. Waiting for MMTtis to be delivered*.
 - **ar7733** - Started testing on Multimission. Waiting for MMTtis to be delivered*.
 - **ar7793** - Started testing on Multimission. Waiting for MMTtis to be delivered*.
 - **cr6814** - Started testing on Lunar Prospector. Working on getting a definition of what was changed.
 - **cr6847** - Started testing on Multimission. In the process of testing.
 - **cr6865** - Started testing on Lunar Prospector. Waiting for LPMtis to be delivered*.
 - **TIS034** - Started testing on Mars 98 (Solaris). Waiting for M98tis to be delivered*.
 - *delivery should be May 5th.
- Found the following problems and entered Anomaly Reports for them:
 - **7498** Title: MMTtis Core Dump on sclk_sct_dir. By: Cindy Lush on 4/2/97
 - Overall Criticality: 3 Fixed
 - Description/Justification: MMTtis core dumps when sclk_sct_directory is set to a directory that exists with read/write permissions and SCLK_SCET file is not in the directory.
- **7536** Title: Display all hang By: Cindy Lush on 4/8/97
 - Overall Criticality: 4 Fixed
 - Description/Justification: Tried running "display all" while running interactively with AIRtis and SEAtis and both TIS' hung after the second screen displayed of "display all".
- **7733** Title: MMTtis SLOW on warmstart files By: Cindy Lush on 4/23/97
 - Overall Criticality: 2 Fixed
 - Description/Justification: While re-running a warmstart file on davis (Ultra 2) found that the run, which took 3 sec. to run on v22.4 build 2, took 2.5 min. to run on v22.4 build 3. There were 4 SFDU frames processed.
- **7786** Title: "Short" Packets By: Cindy Lush on 4/25/97
 - Overall Criticality: 3 Open
 - Description/Justification: In the MMT SRD, it states that TIS should be able to extract packets with data fields up to 31733 bytes, Tis is only extracting packets with data fields up to 31729 bytes.
- **7793** Title: post_hole bit not set By: Cindy Lush on 4/28/97

- Overall Criticality: 3 Fixed
- Description/Justification: MMT SDR req. 24a states that successive frames that would be part of a packet [that is missing a frame] shall have the data made into an invalid packet SFDU, with the "post-hole" bit set. This is not happening, the inc_fhp bit is being set.
- Helping to train another person in testing TIS Subsystem.
- Found and obtained copies of some more of the needed documents to create successful tests for TIS.

2.55.1.1 Major Accomplishments

- Completed testing the following Change Requests (cr) and Anomaly Reports (ar):
- **ar7083** - This test was completed for Lunar Prospector (Solaris). This test was not automated.
- **ar7111** - This test was completed for Cassini (HP). This test was automated.
- **ar7401** - This test was completed for Galileo (SunOS). This test was not automated.
- **ar7402** - This test was completed for Galileo. This test was not automated.
- **ar7461** - This test was completed for Cassini. This test was already automated.
- **ar7498** - This test was completed for Multimission (Solaris). This test not was automated.
- **ar7536** - This test was completed for AIRS TLSCF (Solaris) and SeaWinds (Solaris). This test was not automated.
- **cr6624** - This test was completed for Cassini and Multimission. All parts of the test that could be automated were.
- **cr6805** - This test was completed for Cassini, Deep Space 1 (Solaris), and Multimission. This test was automated.
- Completed the Sun Workstation training class.

2.55.1.2 Cost Funds Status

- Paperwork for CWO is in JPL contracts.

2.55.1.3 Schedule Status

- Ahead of schedule on training, and on schedule for delivery testing..

2.55.2 Quality/Config Management

- N/A.

2.55.3 Problems and Proposed Solutions Summary

- N/A

2.55.4 Plans

- Finish testing and creating regression tests for V22.4 build 3 and Build 4.

2.56 CWO 56 - SPC and DMD Implementation

2.56.1 Performance Status

- Several utility programs to read and dump SPR files have been written. These are being used both to investigate the actual contents of SPR files as well as serve as the basis for further analysis and processing routines.
- An X-Windows server has been installed at ISDS and is being used to access quimby.
- Consultations with the JPL CWO technical manager continued with the goal of identifying specific processing steps as well as intermediate and final products for the solar plasma calibration process.
- Consultations with the programmer who previously maintained the software continue with the goal of identifying and understanding the properties and significance of data items in the SPR file that are relevant for analyzing DRVID data.

2.56.1.1 Major Accomplishments

- None.

2.56.1.2 Cost Funds Status

- This CWO is on budget.

2.56.1.3 Schedule Status

- Schedule maintained by JPL.

2.56.2 Quality/Config Management

- Still getting oriented to existing software and documentation.

2.56.3 Problems and Proposed Solutions Summary

- Access to HP FORTRAN and system documentation continues to be difficult, as the X-Windows link with quimby (through which the on-line CD-ROM documentation is accessed) continues to "break" unexpectedly. Software development continues through telnet and ftp access to quimby.
- Understanding the intricacies of both SPR file format and the source and significance of the data provided has proven to be more time consuming than expected, but progress is being made.
- Specific intermediate goals for the software delivery process still need to be identified and a schedule produced.

2.56.4 Plans

- Identify the tasks needed to implement the PLASMACAL software set. Produce a schedule for accomplishing these tasks in the required time. This is to be done in consultation with the JPL CWO manager and possibly one or more additional JPL staff members assigned to the project.
- Implement software to extract DRVID and related data from an SPR file as well as save and display them in a form suitable for further processing.
- Begin writing drafts for the required software delivery documents (Operators Guide and Test Plan).

2.57 CWO 57 – Unix System Administration Support

2.57.1 Performance Status

- Routine system maintenance and administration tasks including software upgrades and installations, regular system backups, investigating AMANDA backup system currently being employed, and providing user support were performed.

2.57.1.1 Major Accomplishments

- Completed installation of eleven 9 GB disks in buildings 238 and 264 for use in analyzing Space VLBI data. Corrected ongoing network problems in 238-337 and 238-634A. Installed hardware as needed to replace faulty equipment.

2.57.1.2 Cost Funds Status

- Actuals for the month of April are not accounted for because we have not received the PCWO or signed contract.

2.57.1.3 Schedule Status

- Schedule determined by JPL.

2.57.2 Quality/Config Management

- Section e-mail, storage, and backup schemes are being investigated for possible improvements.

2.57.3 Problems and Proposed Solutions Summary

- There are many small disks in the section, some of which experience continued hardware errors. There are also several machines that are unable to accept FDDI network cards or more storage devices because their buses are full of these small disks. We are assisting in the research of alternative storage strategies and capacity planning. A possible solution is the purchase of a network attached storage device. It is being arranged to bring in such a unit for an evaluation period.

2.57.4 Plans

- Integrate two new HP K-460 servers into existing configuration. 2) Order and install more disks for general section use. 3) Continue migration to HP/UX 10.20 on HP systems. 4) Evaluation of alternative archive, backup and storage solutions. 5) Continue ongoing system administration and support.

3. Contract Cost Status

3.1 NASA Form 533M/Q

“A NASA Form 533M report shall be completed in accordance with the instructions on the reverse side of the form. A 533M shall be prepared for the total contract and for each CWO and for each CWO Level 2 WBS Item or below, as mutually agreed upon during negotiations. Reporting categories on each 533M shall be the elements of cost (e.g., labor hours, labor dollars, overhead costs, material, subcontracts, other direct costs, G&A) and profit or fee. A NASA Form 533Q shall be completed in accordance with the instructions on the reverse side of the form. Reporting levels and categories shall be the same as those required for the 533M.”

3.1.1 General

All CWOs are on contract with the following exceptions: CWO 41-1,55,59 and 60.

DCAA has signed off on new provisional billing rates, making last month's unofficial rates now official (Appendix 7).

3.1.2 Reports

The following reports are included in this month's deliverable.

3.1.2.1 NASA 533M - JPL FY 1997 (Appendix 2)

The attached NASA 533M report is for the Infotec Development, Inc. accounting period Sept. 21, 1997 to accommodate JPL FY97. As agreed at the 11 September 1995 CWO/Cost Management meeting with JPL, the ISDS Team is reporting only the current JPL fiscal year (1997) data in the NASA 533. A summary report has been included that shows total costs to date by CWO. The September 1995 Monthly Activity Report (MA006) contains all JPL FY95 year-end cost data detail.

Also per agreement at the 11 September 1995 CWO/Cost Management meeting, we are reporting the latest received negotiated estimate for each CWO in the last column of the NASA 533.

Per JPL request, the Contract Value Cost summary on the NASA 533 reflects the total negotiated costs (last column) of all CWOs for JPL FY97 only. Since CWOs are used by JPL to establish funding and are based on latest revised cost estimates (actual costs plus estimate to complete), CWOs clearly do not track changes only in scope or original baseline estimates. ISDS attempts to maintain individual CWO Contract Values (2nd to last column) internally as baseline target costs. The ISDS Microframe cost management system is designed for building these baseline estimates “bottoms up” and can only be revised easily for changes in scope. Due to the following reasons, CWO baselines are becoming more difficult to maintain and are resulting in less meaningful individual CWO Contract Values.

- Most CWO efforts are not task-driven, since the period of performance for most CWOs starts and ends commensurate with the JPL fiscal year. It is difficult to maintain a target cost associated with the task, when the task may continuously change to fit the period of performance.
- The staffing for most CWOs are level of effort. Deltas in past labor costs are often attributed to a combination of scope, staffing, personnel rate, and requirement changes. Since CWO Supplements are based on the total latest revised estimate, it is often difficult to determine the portion of cost associated with a baseline change and over/underun.

- Our JPL technical customers are often very involved in the staffing process. When personnel changes result in cost deltas, it is often unclear whether the baseline Contract Value should be changed.

The Contract Value Fee summary header reflects the total fee pool established by negotiated CWOs. The Fund Limitation is the total of all individual CWO funding for JPL FY97. Since some CWO's may be partially funded, or funded only for PCWO effort, this amount may differ from the sum of the Contract Value Cost and Fee.

Billing values are totals from ISDS contract inception through the reporting date.

3.1.2.2 NASA 533Q - JPL FY 1997

Appendix

3.1.2.3 Monthly Whole Hours/Dollars Report - JPL FY 1997(Appendix 3)

This report depicts monthly and cumulative whole hours and whole dollar cost estimates associated with each CWO. *It is based only on JPL FY 97 CWO effort.*

3.1.2.4 ISDS Cumulative Costs - From Contract Inception (Appendix 4)

This report summarizes cumulative actual costs and total latest revised estimates from inception of the contract, including JPL FY 95, 96 and 97 effort. It is provided per agreement at the 11 September 1995 CWO/Cost Management meeting with JPL and per NASA Handbook 9501.2B (Procedures for Contractor Reporting of Correlated Cost and Performance Data) Section 301, Paragraph 4b (10).

3.1.2.5 ISDS Personnel Allocation (Appendix 5)

This report is provided per request of JPL. It depicts the current approximate allocation of each ISDS employee to each CWO, at the end of the reporting month. This table only illustrates the association of an employee to a CWO and does not reflect equivalent man-months budgeted, percentage of the month actually worked, or any vacation/sick time.

3.1.2.6 CWO Funding Projections (Appendix 6)

This table projects the date that current CWO funding expires, if prior to the end of the period of performance. It also identifies whether 75% of funding will be reached within the next 30 or 60 days, for purposes of the contract funding limitation clause.

3.1.3 Subcontractor Costs

Subcontractor costs reported in November are based on CSC November period of performance costs reported by the CSC Program Management Office (PMO). NASA 533 subcontractor costs are stated in dollars that include CSC overhead and G&A. The overhead and G&A summaries on the NASA 533 depict IDI burdening on all elements of cost.

3.2 Overhead Report

"An overhead report shall provide a listing of the latest bidding, billing and actual overhead and G&A rates by cost centers. The fiscal year calendar shall also be included."

Attached as **Appendix 7** is the draft letter from the Defense Contract Audit Agency (DCAA), stating the ISDS provisional billing rates (see JPL line items). **Appendix 8** states the current overhead rates used in

estimating FY97 costs in this month's report. ISDS accounting and NASA 533 reporting are based on the calendar provided as **Appendix 9**.

The following is a summary of ISDS overhead burdening by cost center.

IDI Employees

- I. Apply IDI fringe rate (salary or salary-plus, as applicable) to direct labor dollars.
- II. Apply ISDS Indirect Facilities rate (onsite or offsite, as applicable) to direct labor dollars. This rate is unique to the ISDS program, and is not company-wide.
- III. Apply IDI G&A to the resulting total burdened amount (subtotal after I and II above).

CSC Subcontractor Costs

- I. CSC applies company-unique overhead and G&A to direct labor dollars, and provides this as their invoiced cost to IDI.
- II. Apply ISDS Indirect Facilities rate (onsite or offsite, as applicable) to CSC burdened amount in I above.
- III. Apply IDI Material & Handling to CSC burdened amount in I above.
- IV. Apply IDI G&A to the Indirect Facility burden pools, itemized in II.

Consultant (IDI only)

- I. Apply IDI G&A to consultant invoiced dollars.

ODC's (billed by IDI only)

- I. Apply IDI G&A to prime dollars.

3.3 Reconciliation

"A reconciliation report shall be prepared in accordance with the instructions on the reverse side of the 533Q.

The following is a program-level reconciliation of the contract estimates for JPL FY97 only. Due to the varying contractual status of each CWO, it is recommended that the narrative for each CWO be referred to when making deductions about cost performance or funding status. Several CWO Contractor Estimates have got ahead of the contractual paperwork and are more up-to-date than the Negotiated Estimates. In some cases, Contractor Estimates reflect requirements given verbally to ISDS, but not yet received in formal CWO Supplements. Because of this, we do not feel that a program-level reconciliation necessarily depicts an accurate cost comparison.

We have provided the most accurate estimates possible in the Contractor Estimate for these CWOs at the time of this report, regardless of the contractual status, in order to provide JPL with the most current cost projections possible.

A) Total of Individual CWO Contract Values (Based on ISDS target baselines)	\$6,284k
B) Total Negotiated Cost Estimates (Based on CWOs signed by JPL Procurement)	\$6,173k
(C) Estimated Final Contractor Estimate	\$6,076k
D□□Projected Underun Delta (B-C) D)	\$97k
E) Total CWOs not signed by JPL	\$109K

4. RECOMMENDED JPL ACTION

“The Contractor shall identify all critical items that require JPL attention, resolution and/or assistance to successfully maintain or improve the direction of the CWO in order to meet CWO objectives.”

4.1 Contract Work Orders (CWOs)

- ISDS requests formal JPL closure to CWO 34. All effort has been completed.

5. Appendices

5.1 Schedules

5.2 NASA 533M - JPL FY 1997

5.3 Monthly Whole Hours/Dollars Report - JPL FY 19967

5.4 ISDS Cumulative Costs - From Contract Inception

5.5 ISDS Personnel Allocation

5.6 CWO Funding Projections

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5.7 IDI FY96 Provisional Billing Rates

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5.8 IDI FY96 Estimating Overhead Rates

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5.9 ISDS Accounting/Holiday Calendar